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The Appearance of the
on the Sun in June & July
1703. as observed by
W: Derham F.R.S.

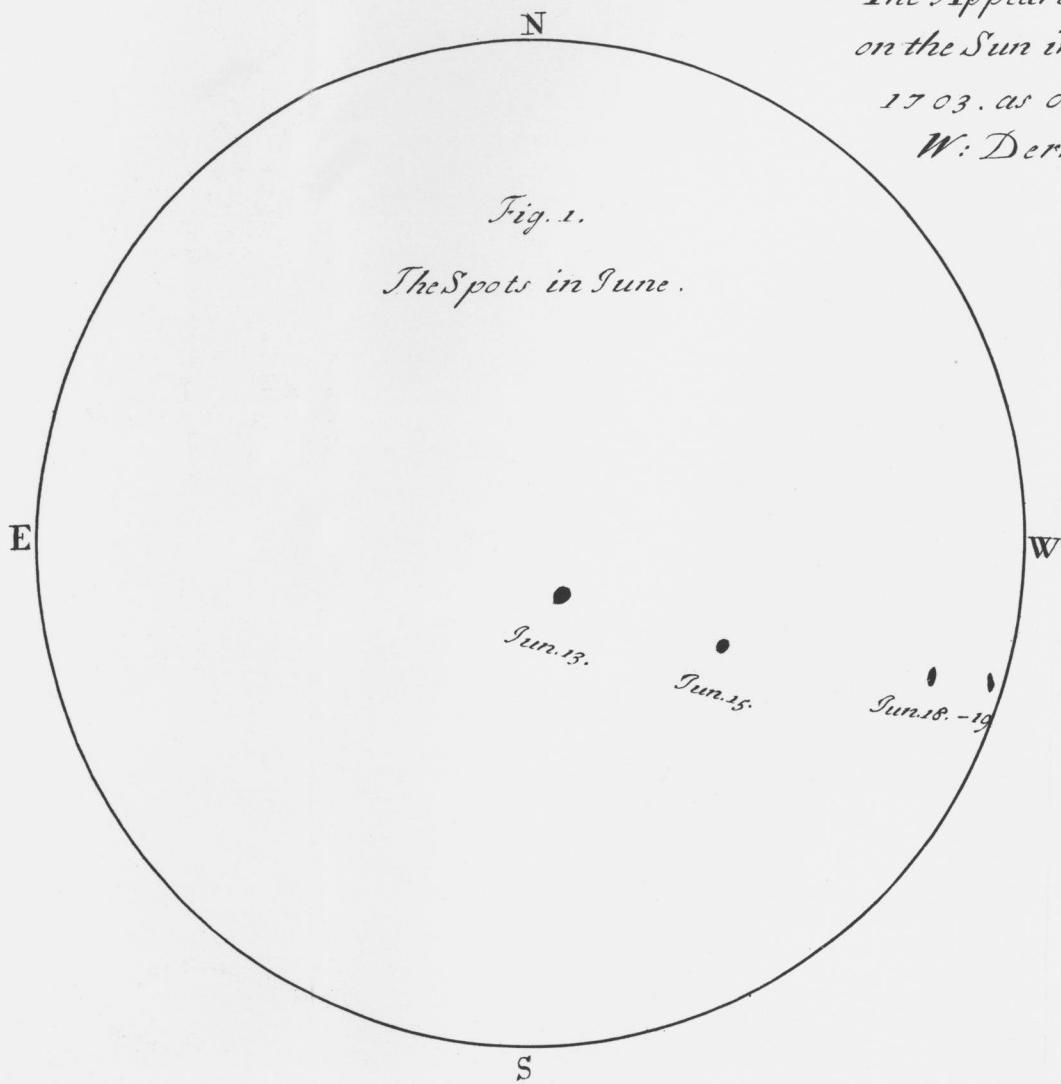


fig. 1.



fig. 2.

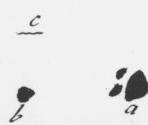


fig. 3.



fig. 4.



fig. 5.



fig. 6.

pearance of the Spots
Sun in June & July
. as observed by
Derham F.R.S.

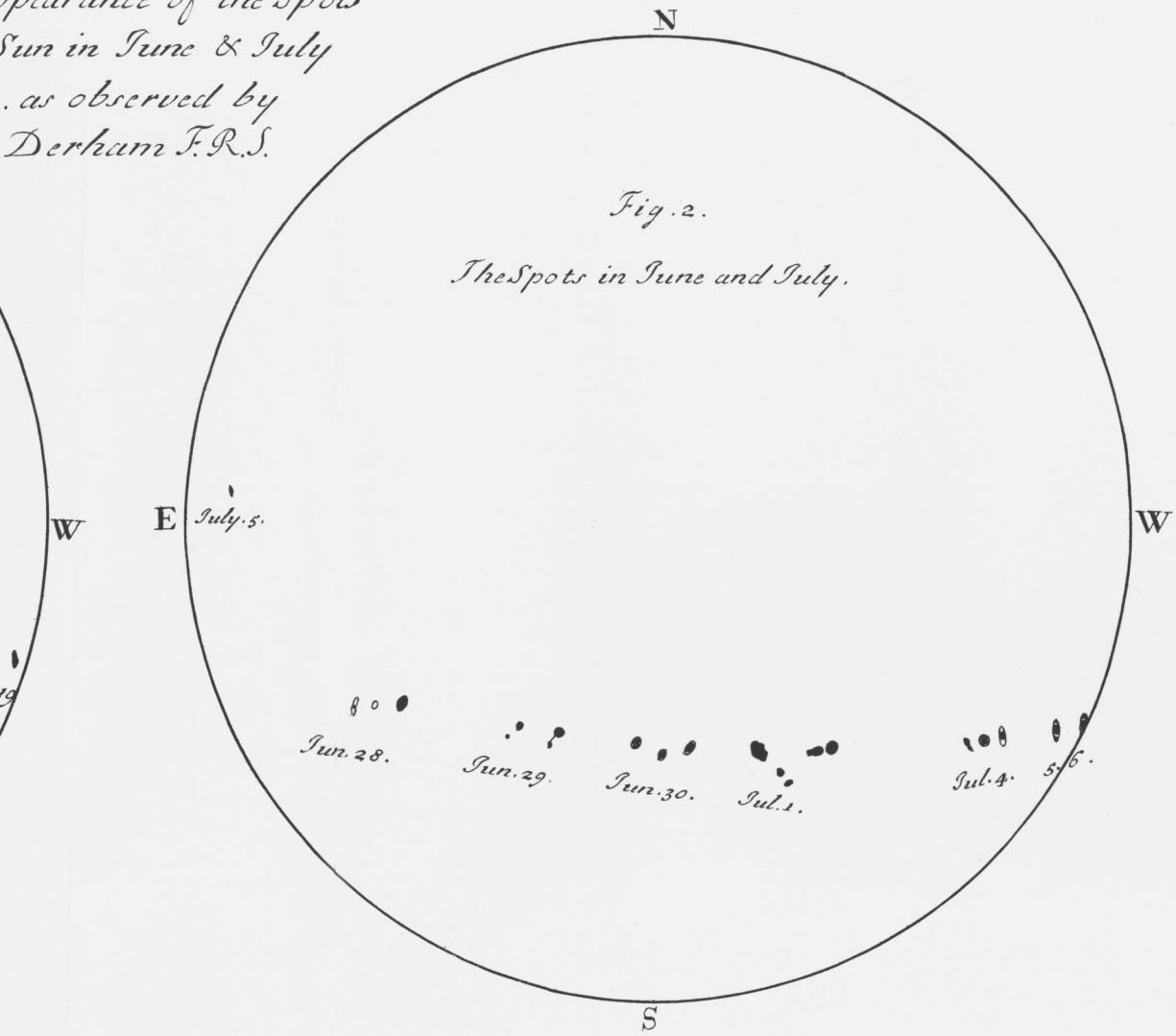


Fig. 2.

The Spots in June and July.

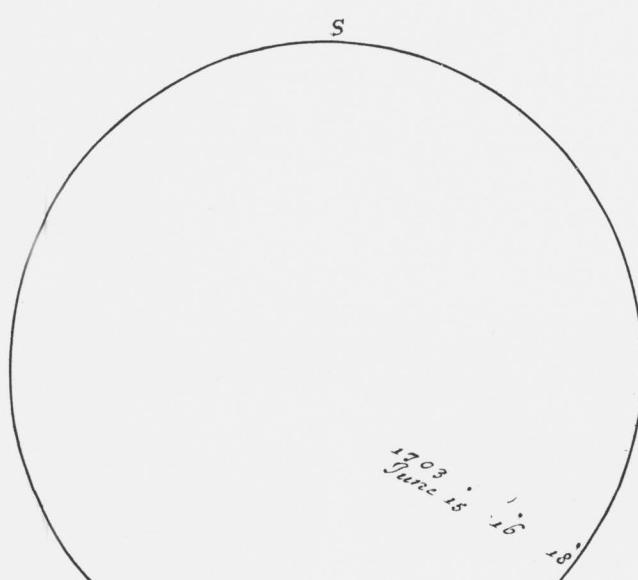


Fig. VIII.



fig. 6.

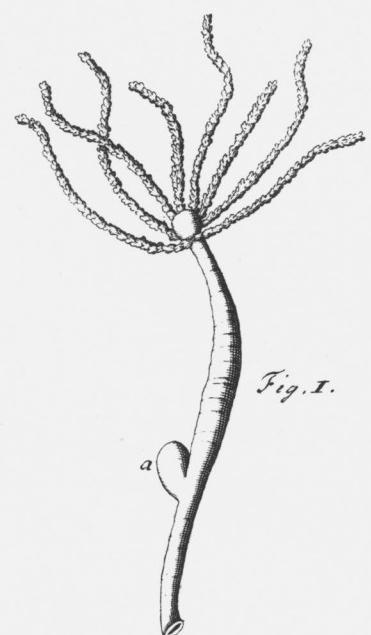
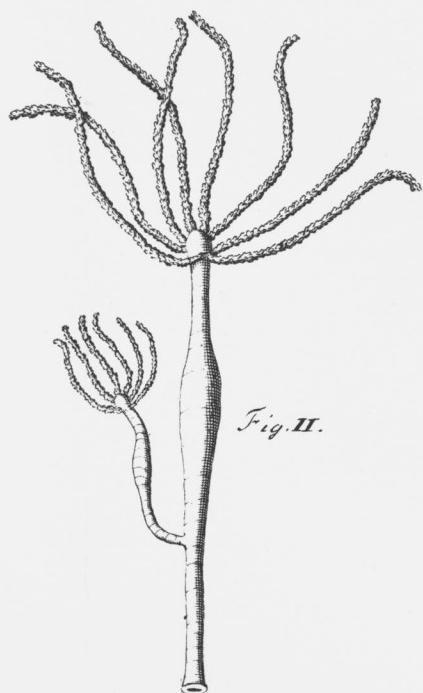


Fig. VI.

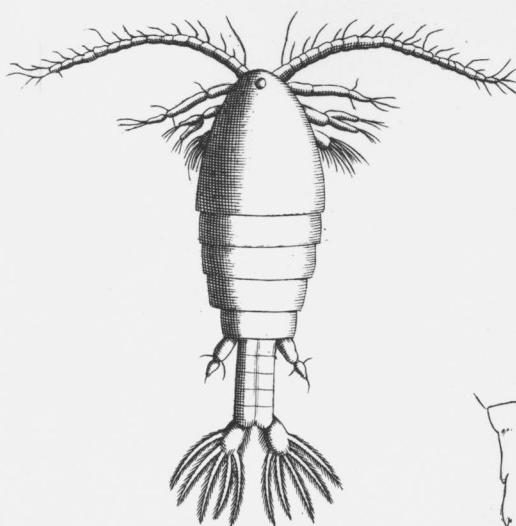


Fig. V.

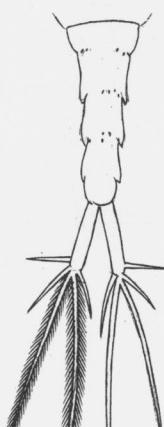
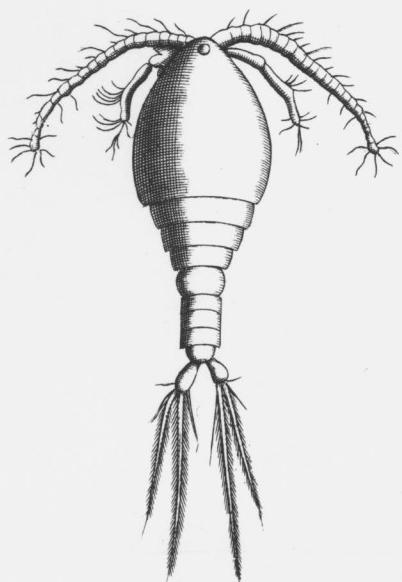


Fig. VII.



1703. as observed by
W: Derham F.R.S.

Fig. 1.

The Spots in June.

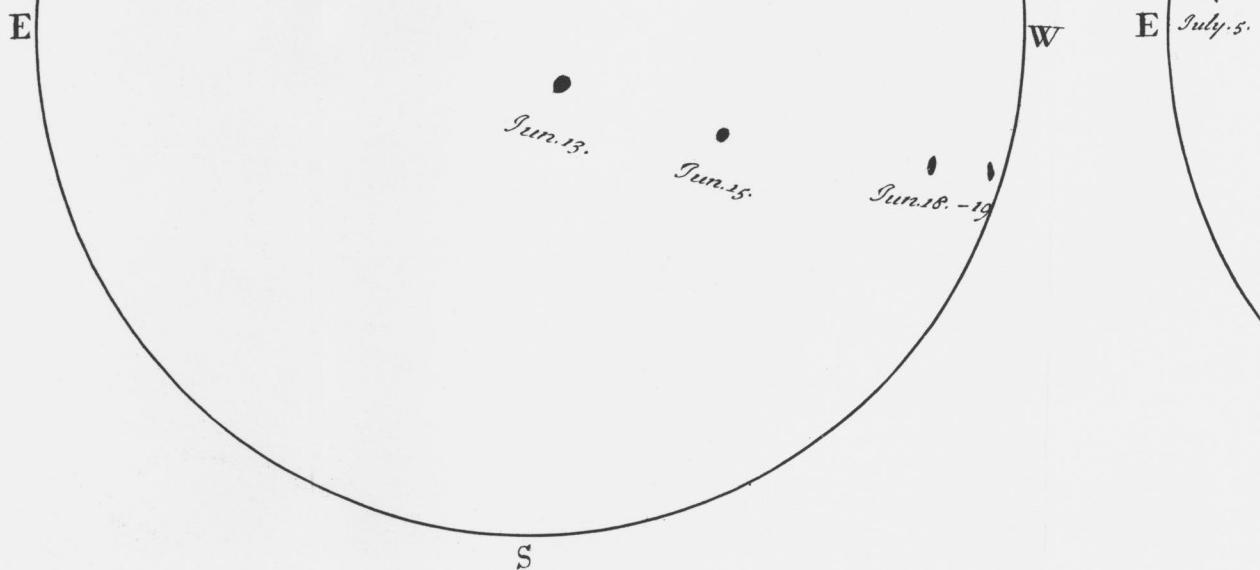


fig. 1.



fig. 2.

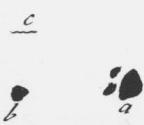


fig. 3.



fig. 4.



fig. 5.



fig. 6.

as observed by
Derham F.R.S.

Fig. 2.

The Spots in June and July.

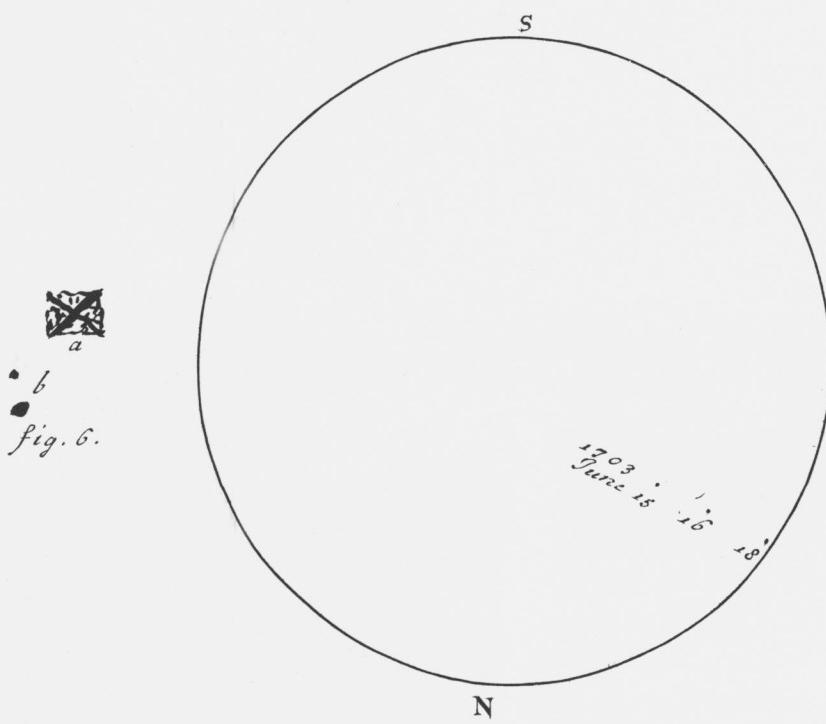
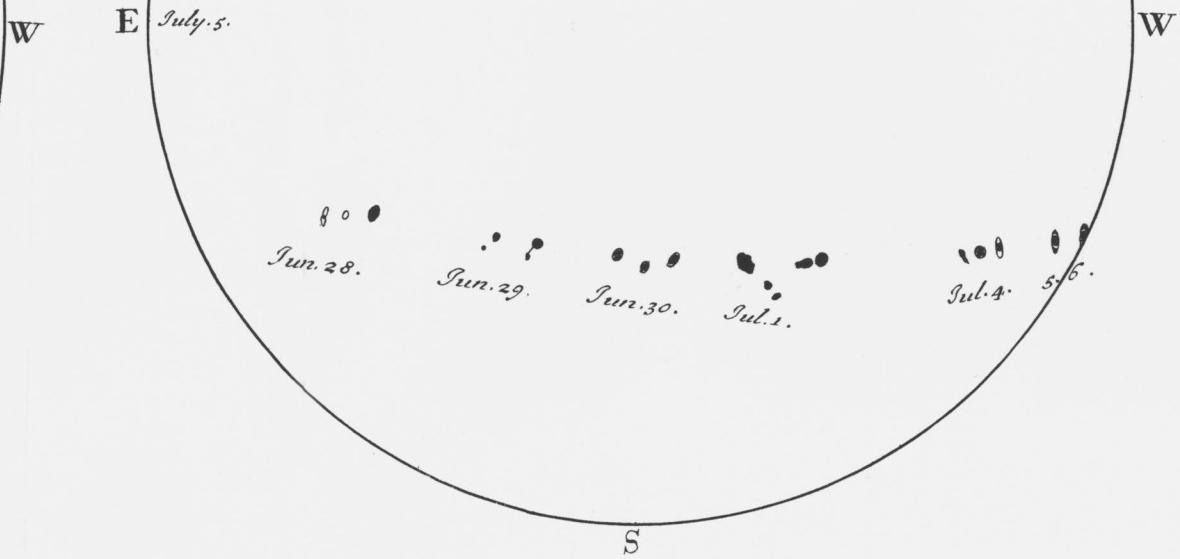


fig. 6.



Fig. VII.

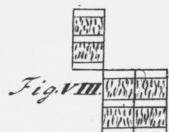


Fig. VIII.

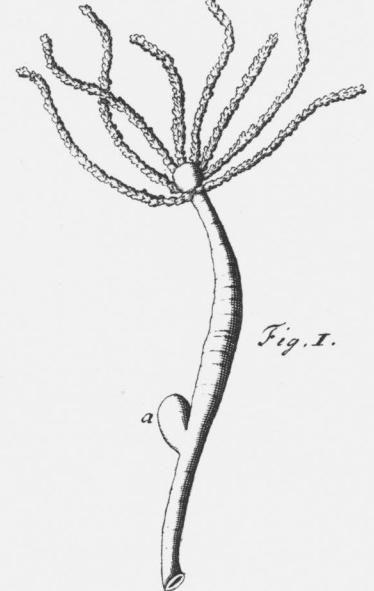
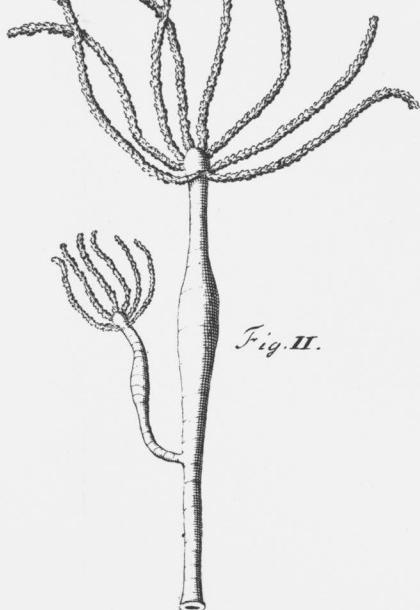


Fig. VI.

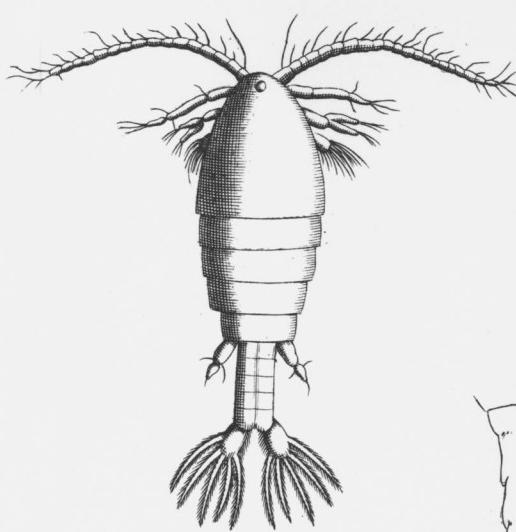
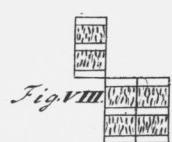
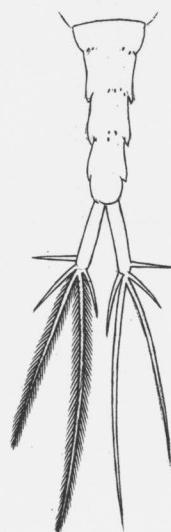
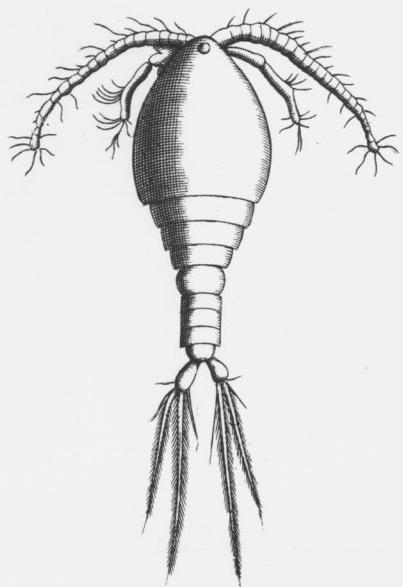


Fig. V.



The 28th about 7 in the Morning, I saw that the great Spct was much augmented, but the lesser ones that yesterday attended it, were vanish'd, and that there were two new ones generated at about $1\frac{1}{2}$ minutes distance from the great one below, and towards the left hand of it the great one was a parallelogram, with a very black diagonal crossing it, see Fig. 5. at 10 a Clock there was another diagonal crossing the former, and the two lesser Spots which before were longish, had now taken a round form, the Spot c. being much larger than the other at b.

I am not yet furnish'd with proper Instruments to find the position of the Suns Spots, with respect to Longitude and Latitude on the Suns Disk, so I contented my self with observing the position and variation of the Spots among themselves, which afforded me a most strange and wonderful variety.

III. Some Observations on the Spots of the Sun, by the reverend Mr William Derham, F. R. S.

Explication of the Figures.

THe two Circles represent the Suns Disk, and N. the Northern part thercof, S. the Southern, E. the Eastern, and W. the Western part.

The place of the Spots, and the manner of their Appearance every day, is represented with the day of the Month on the Sun's Disk.

But I desire it may be observed, that altho' the Figures of the Spots are done pretty exactly, yet their places on the Sun are not so, for being unprovided with convenient Instru-

Instruments for the purpose, I could not exactly set off their delineations, nor their distances from the Suns limb, but was forc'd to represent them only as well as I could, by taking the species of the Sun upon Paper through a Telescope, and so marking out their places.

But since the last appearance of the Spots, I have invented, and have provided my self with an exceeding nice Micrometer, and a Watch that beateth half Seconds, hoping to have been able to have seen another Revolution of them.

My Micrometer is not as usually, to be put into a Tube, but is to measure the species of the Sun on Paper (of any Radius) or to measure any part of it, which I am inclin'd to think is more exact than the common way. By this means I can easily, and very exactly, with the help of a fine thread, take the declination of a Spot at any time of the day ; and by my half Seconds Watch, and a fine cross hair (which latter way I learnt from my Friend Mr Flamstead) I can measure the distance of the Spot from the Suns Eastern or Western Limb.

This cross fine Hair, I advise, from my own experience, should be set, not at the exact focal distance from the Eye-Glas (as usually) but a little out of that distance, nearer towards the Object-Glas, because the shadow of the Hair will be thereby much narrower, and more strongly appear cross the species of the Sun receiv'd on the Paper, which I take this occasion to note, not only because I believe it hath scarcely ever been before observ'd, but because it may be of good use in taking the Suns altitude, measuring his diameter, &c. this being a more easy, and perhaps a more exact way, than by looking through the Tube.

Being thus provided, if I could have seen another Revolution of the Suns Spots, I should have been able to have given the Society a more accurate Account of their Position and Motion. But I hope it hath been done by some others, and that their more accurate Account may render this of mine

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use.

useles. And this I the more earnestly wish, because I have now little hopes of mending my defects, by reason the Spots are all quite gone off. They seemed strong enough to have lasted another, or more Revolutions, but none have been visible since the sixth of this Month, on which day I think I had a glimpse of a Spot on the Suns Western Limb, about 7 of the Clock in the Morning.

The appearances of the Spots, being in the Figures above, set with every day of the Month, I need say but little, only take notice of a few things that the Figures do not so well express.

The Spot in Fig. 1. was as represented, *viz.* 1st round and strong, afterwards long, and with a *Nucleus*. The very same Spot (I doubt not) I saw again on the Suns Eastern side on July 5, but very faint, small and long (as in Fig. 2.) so as to be but just discernible. On July 6 it quite disappeared, both through my Tubes, and on Paper, which is better.

The Spots in Fig. 2. had these remarkable appearances and variations. On June 28 viewing the Sun towards Evening, I espy'd a large, strong dark Spot, with two or more glaring *Nubeculae* behind it, somewhat like the representation in the Figure. These the next day were become four strong dark Spots, the foremost with a tail to it, conjoyning the little Spot next it, as in the Figure. On June 30. I saw Spots, but it being a cloudy morning, and I absent from my Tubes in the afternoon, the Representation of them in the Figure is not exactly as they were. July 4. between two long Spots appeared something like a round *Nubecula*, as in the Figure. The rest as in the Figures.

Thus, for want of a better from others, I have given the best account of the late Solar Spots. The single Spot in June may be seen to have passed above half over the Disk before a very good Friend of mine gave me notice of it. And that or some others were, I hear, seen in May :

May : but it was not my fortune to see them sooner ; which if I had, I might have been able probably to have made my account better. But notwithstanding it is imperfect, it may, I hope, introduce better from others : or however be a testimony of my great Veneration for the August Royal Society, and obedience unto the commands thereof, who at one of their Meetings some time since, were pleased to desire me to procure, or give an account of this matter.

IV. *Some Observations concerning the Invention and Progress of Printing, to the Year 1465. Occasioned by the Reverend Mr Ellis's Letter, exhibited in Phil. Trans. No 286. Pag. 1416.*

WHAT this Gentleman says about the Books Printed at Harlaem by Laurence Koster, agreeing so well with the account given by *Theodore Schrevelius* and others, leaves us little or no room to doubt (whomust needs take it for granted that his Observation is accurate, and the Dates to be true;) whether the Honour of the Invention be due to *this* or the other Cities, whose Writers have so eagerly contended for it; since none of them have pretended to shew any Book Printed so soon as A. D. 1430 or 1432, or near that time. But the difficulty lies, either in shewing why the Practice of this Art should be at a stand from A. D. 1432, to the noted Reviving of it at Mentz by *John Fust* and *Peter Schoeffer*, who (as it has been vulgarly, but erroneously said) did Print the first Printed Book there A. D. 1465. namely, *Tully's Offices* : or else, in giving any tolerable account of the Progress of this Invention during an Interval of above 30 years.